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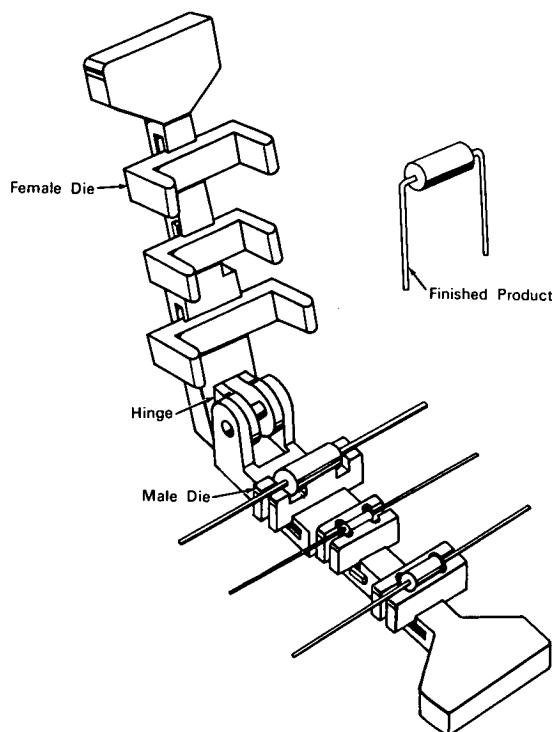
Brief 65-10181

# NASA TECH BRIEF



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## Hand Tool Bends Component Leads Accurately



**The problem:** Electrical components that are mounted on printed circuit boards must have their leads bent to exactly match the spacing of the holes in the printed circuit. Bending the leads with hand-held pliers frequently causes sufficient damage to the bend radius to require component rejection.

**The solution:** A hand-operated die set that will bend component leads to perfectly match with the holes in a printed circuit board. No damage to the leads occurs during the bending operation.

**How it's done:** The tool consists of a hinged die set holder that will accommodate dies of various sizes for

bending the leads of a variety of components. Each lower die has a recess for the component to rest in and slots at either end to receive the lead as it is bent. The upper dies have smooth, rounded surfaces that contact both leads of the component. As the tool is closed about the hinge, the component leads are forced into the slots of the lower dies by the rounded edges of the upper die.

### Notes:

1. This tool effectively speeds up printed circuit fabrication and greatly reduces the incidence of component rejection.

(continued overleaf)

2. Inquiries concerning this invention may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama, 35812  
Reference: B65-10181

**Patent status:** NASA encourages the immediate commercial use of this invention. It is owned by NASA and inquiries about obtaining royalty-free rights for its commercial use may be made to NASA, Code AGP, Washington, D.C., 20546.

Source: Chrysler Corporation under contract  
to Marshall Space Flight Center  
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